Clue #1

WHODUNNIT?

Compared to graph of the parent function $y = x^2$, what appears to change to get the graph of $y = (x - 2)^2$?

Shift down 2 units	Miss Beta was doing handstands in the pool.
Shift up 2 units	Coach Omega was reading in the library.
Shift right 2 units	The victim was not bitten by a venomous snake.
Shift left 2 units	The victim was not electrocuted.

WHODUNNIT?

Clue #2

Jazmin graphs $y = x^2 - 2x - 8$. What is the axis of symmetry?

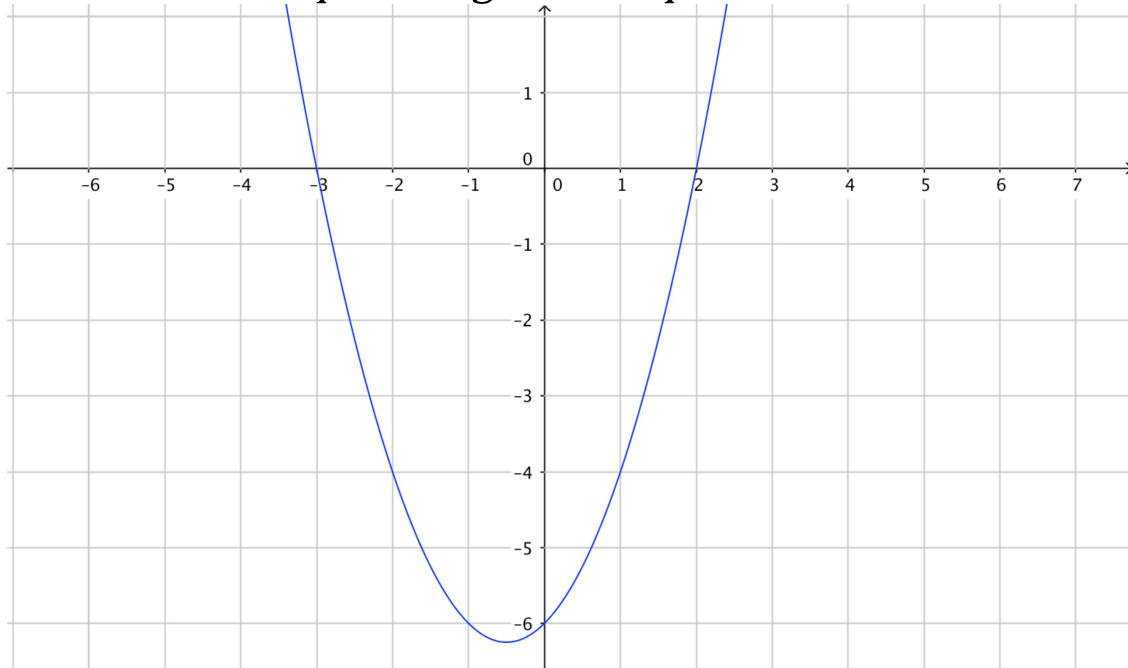|	
$x = -1$	A venomous snake did not bite the victim.
$x = 1$	Professor Delta was gathering sweat samples in the gym.
$x = 2$	A fallen object was not the cause of death.
$x = 4$	Miss Beta was in the library reading *Twelfth Night*.

Which equation gives the parabola below?

$$y = x^2 + x - 6$$ The victim did not drown.

$$y = x^2 - x - 6$$ Mr. Epsilon was doing Pilates in the gym.

$$y = -x^2 - x - 6$$ Coach Omega was watching *Bridget Jones* in the movie theater.

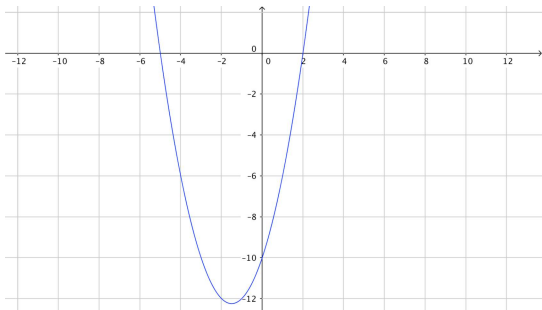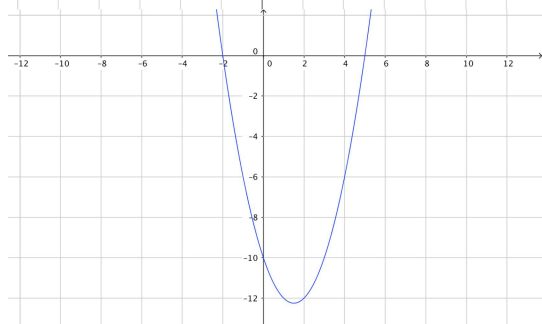$$y = -x^2 + x - 6$$ The murder was not a mauling by a cougar.
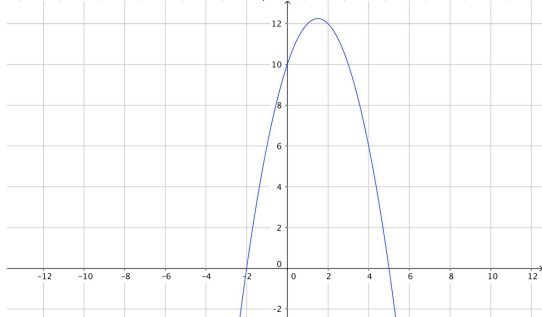
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Clue #4

WHODUNNIT?
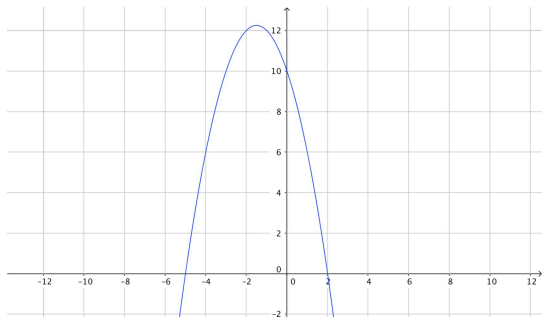
Which parabola is given by $y = -x^2 - 3x + 10$?

Dr. Alpha was reading *Othello* in the library.

Miss Beta was baking bread in the kitchen.

The victim was not electrocuted.

A cougar did not maul the victim.

Clue #5

WHODUNNIT?

The graph of $y = (x + 3)^2 - 4$ has its vertex at:

$(-3, 4)$	Drowning is not the cause of death.
$(3, -4)$	The victim was not bitten by a venomous snake.
$(-3, -4)$	Dr. Alpha held a class in the movie theater.
$(3, 4)$	Coach Omega was studying in the library.

WHODUNNIT?

Clue #6

What are the x-intercepts of $y = x^2 - x - 12$?

$x = -3; x = -4$	Mr. Epsilon was practicing Tai Chi in the gym.
$x = 3; x = -4$	The victim was crushed by a fallen object.
$x = 3; x = 4$	Chemical poisoning was not the cause of death.
$x = -3; x = 4$	Coach Omega was changing the filters in the pool.

???

Clue #7

???

WHODUNNIT?

Compared to graph of the parent function $y = x^2$, what appears to be the graph of $y = -x^2 + 1$?

Reflected across the x-axis and moved up 1 unit	The victim was not crushed by a fallen object.
Reflected across the y-axis and moved up 1 unit	Mr. Epsilon was sending email in the library.
Reflected across the x-axis and moved down 1 unit	Miss Beta was reading recipes in the kitchen.
Reflected across the y-axis and moved down 1 unit	The victim did not drown.

WHODUNNIT?

Clue #8

What is the minimum value of $y = x^2 - 4x + 8$?

-4	The victim was not crushed by a fallen object.
2	Professor Delta was pumping iron in the gym.
4	Miss Beta was polishing bookshelves in the library.
8	The victim was not mauled by a cougar.

???

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Clue #9

Maria uses a computer graphing program to transform $y = x^2$, shifting it right 2 units, reflecting it across the x-axis, and shifting it up 3 units. What is the equation of her result?

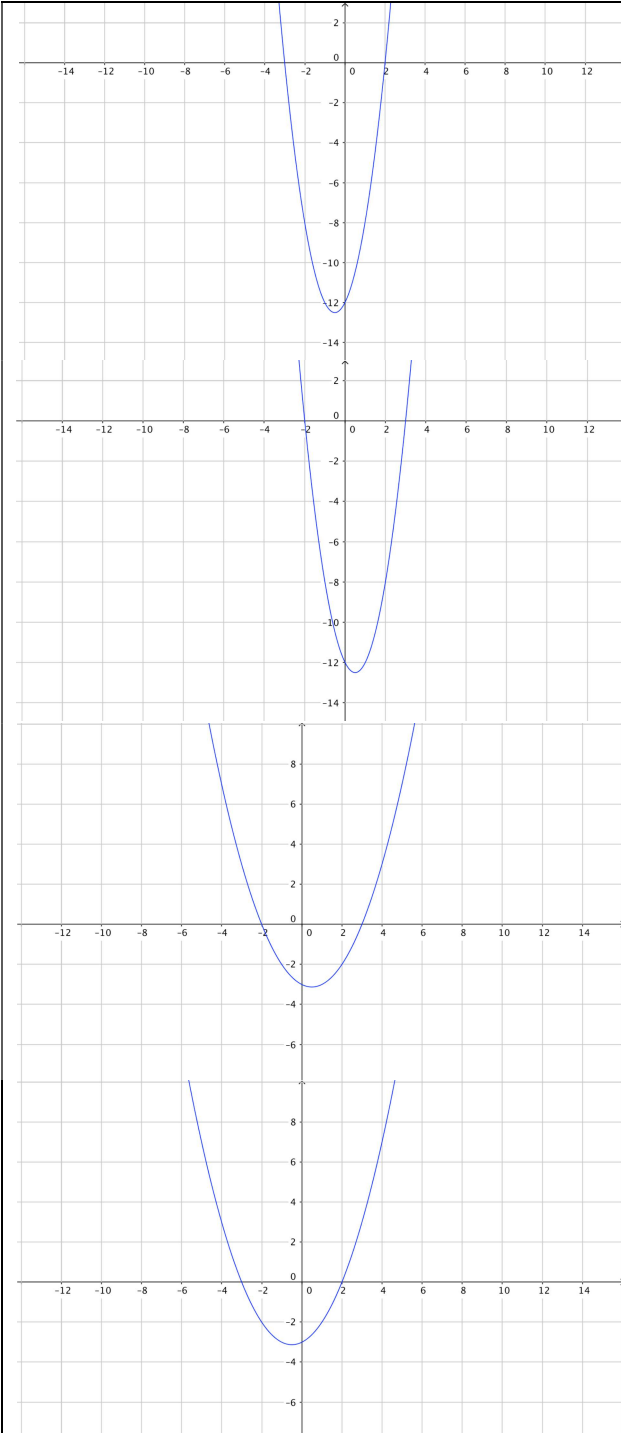|	
$y = (-x + 2)^2 + 3$	Mr. Epsilon was drawing in the atrium.
$y = -(x + 2)^2 - 3$	The victim was not electrocuted.
$y = -(x - 2)^2 + 3$	Chemical poisoning was not the cause of death.
$y = (x - 2)^2 - 3$	Mrs. Gamma was making tacos in the kitchen.

???

Clue #10 WHODUNNIT?

Which graph below shows the parabola given by the equation
$$y = 2x^2 + 2x - 12 ?$$

Mr. Epsilon was making a burrito in the kitchen.

Mrs. Gamma was stretching in the atrium.

Electrocution did not kill the victim.

Chemical poisoning was not the cause of death.

???

Alternate Ending

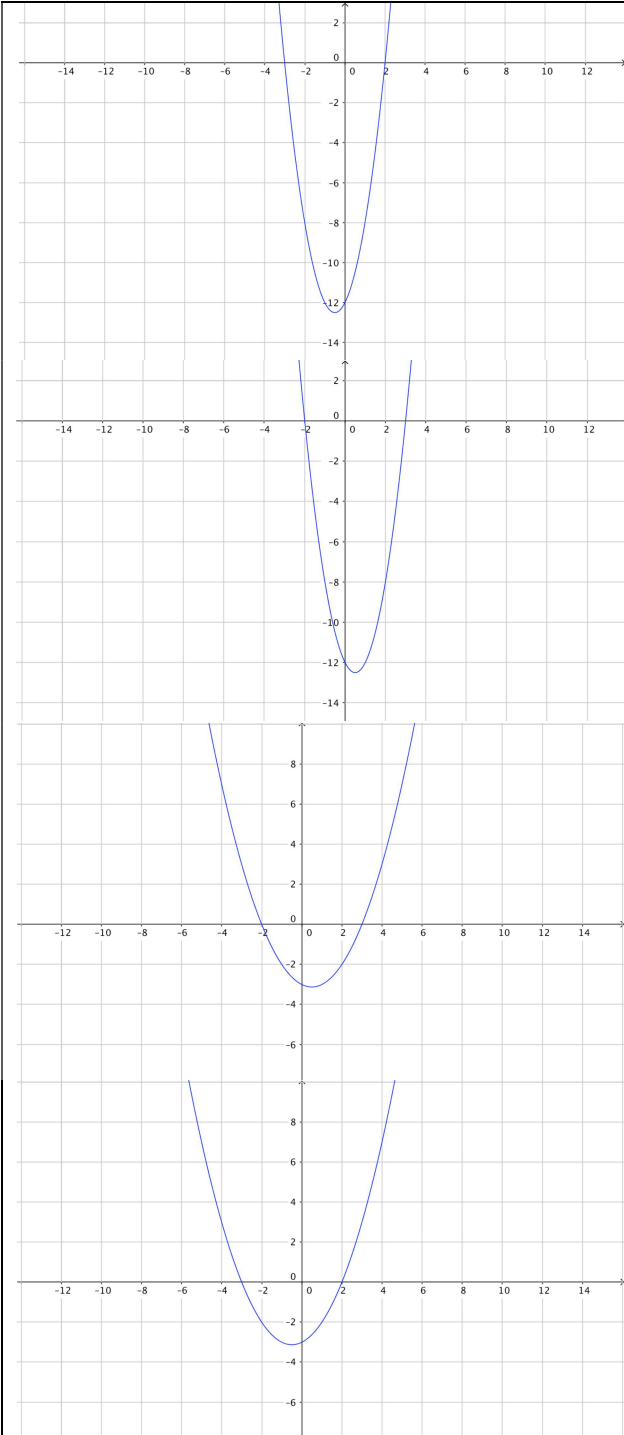# WHODUNNIT?

"Mr. Epsilon used electrocution in the kitchen".

Clue #10

WHODUNNIT?

Which graph below shows the parabola given by the equation
$$y = 2x^2 + 2x - 12 \ ?$$

Mrs. Gamma was stretching in the atrium.

Mr. Epsilon was making a burrito in the kitchen.

Electrocution did not kill the victim.

Chemical poisoning was not the cause of death.